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Abstracts

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1 - Canine skin organ culture under serum-free conditions: morpho-physiology and mast cell behaviour in response to degranulating and modulatory stimuli

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Introduction: Although canine skin models are already available as either monocellular or organotypic cultures, they only partly recapitulate normal skin organization and function. Skin full thickness cultures may offer unique opportunities to study skin morpho-physiology in a biologically relevant 3D environment, complying with the principles of the 3Rs in animal research. Moreover, they may provide insight in the effects of various agents on the skin. Mast cells (MCs) are tissue-homing leukocytes, densely packed with metachromatic granules, containing highly active biological compounds (e.g., cytokines, growth factors) that can be rapidly released upon stimulation. One of the most recently discovered regulatory mechanism of MC degranulation relies on palmitoylethanolamide (PEA), an endogenous lipid compound and an endocannabinoid-like molecule. Recently, a clinical study has shown the efficacy and safety of PEA in reducing pruritus and skin lesions in dogs with atopic dermatitis.
Materials and Methods: Skin biopsies sampled from client-owned dogs presented for surgery were cultured in triplicate, under submerged conditions, in Williams' E medium supplemented with penicillin/streptomycin, insulin, hydrocortisone and glutamine. Experiments were performed to evaluate the effect of ultramicronized PEA (30 μM) on skin viability and mast cell degranulation induced by compound 48/80 (10 μg/mL). One-way ANOVA in conjunction with Bonferroni's Multiple Comparison Test was used for statistical comparisons.
Results: Compared to vehicle, PEA treatment did not induce any epidermal nor dermal morphological changes suggestive of damage. Compound 48/80 induced MC degranulation and PEA treatment resulted in a significant decrease in the percentage of degranulating MCs ($P < 0.05$) without effect on MC density (number per mm^2).
Conclusion: The study corroborated the use of canine skin organ cultures as useful models for studying morpho-phisiology features of the skin and its responses to various agents. It also confirmed previous data on the lack of adverse effects of PEA and its ability to down-modulate skin MC degranulation.

2 - Morphometrical evaluation of renal tissue damage caused by radiofrequency ablation in the porcine model

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Introduction: Studies on renal radiofrequency ablation (RFA) have shown tissue damage, such as coagulative

Parameters like total length, crown height and occlusal angle could be measured. Volume and curvature could be calculated. In addition information on degree of hardness could be obtained.
Results: Tooth length and crown height, curvature and approximation of hardness decreased distally for both upper and lower jaw. Lingual crown height was larger in maxillary teeth, while buccal crown height is larger in mandibular teeth. The occlusal angle differed between mesial and distal aspects of single teeth and was lowest for premolars. All molars showed an occlusal angle of 35–45°. Tooth volume differed between upper and lower jaw, with the maxillary premolars being largest.
Conclusion: To our knowledge this is the first report of metric data on anatomical parameters of guinea pig teeth that are highly needed as references for clinicians.

144 - Biometrical approach to evaluate the relationship between roe deer body parameters and winter feeding resources

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Introduction: The study aimed to analyze the biometrical data referred to animals pertaining to class age 0 (0–11 months), in roe deer population of central Italy Apennine, in order to evaluate the relationship between size/shape of body structure/parameters and feeding resources available during the autumn-winter period.
Materials and Methods: The analysis of the size was performed on 56 roe deer obtained by selective shooting. For the mandible shape analysis 27 samples were treated with the GeoGebra's program. To evaluate the relationship between size/shape of body structure/parameters and the feeding resources, an environmental category, derived from the carrying capacity of forest ecosystems relative to the hunting zone, was attributed to each animal. Statistical analysis of size was performed by ANOVA. Shape variables were generated using a Generalized Procustes Analysis program.
Results: The analysis of the size showed no significant differences for analyzed parameters between sex, while five parameters showed significant differences among environmental categories. As mandible concerns, it showed an increasing size trend linked to the available feeding resources. This is also supported by the fact that the shape analysis showed a more open mandibular angle (for the mandibular dorsal view) in those animals living in the hunting zone characterized by highest feeding resources, in particular in subjects pertaining to the subclass 0–8 months.
Conclusion: Data analysis suggests that the mandible seems to be the element whose development is mainly affected by the winter feeding resource availability. In the roe deer, the mandible reaches the definitive size during the first living year. So, the food availability during the first winter season could represent a critical factor for the development of this bone. This approach applied to a wider database could be useful to define body marker parameters related to environmental carrying capacity to planning the roe deer selective shooting.

145 - NeuroPraep – be on track for neurological diseases

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Introduction: Veterinary and medical students perceive neurology as a difficult, even fearful subject, a phenomonen called "neurophobia" (Abulaban et al. Neurosciences Riyadh 2015; 20 37–40). To successfully acquire clinical skills and establish knowledge in neurosciences, anatomical fundamentals are essential. Our aim was to design a new elective course for preclinical veterinary students combining neuroanatomy and clinical neurology.
Material and Methods: Basic concept of the course was the didactic-systematic teaching of neurological symptoms based on functional and topographic anatomy. In close collaboration with clinical partners, disorders such as laryngeal hemiplegia, lumbosacral stenosis or bladder dysfunction were selected. Teaching strategy was group work. Each group consisting of 3–5 students had to compile a protocol and perform dissections in a self-responsible way. Providing high expertise, neuroanatomy and clinical neurology specialists supported each lesson of the course. To share results a poster session was implemented as tool to provide a professional communication tutorial. Students' perception of the course was evaluated using questionnaires.
Results: All groups prepared precise dissection protocols. Preparations were carried out with high level of emphasis on relevant anatomical structures, key to elucidate neurological signs of respective disease. During presentation students confirmed that acquired knowledge on anatomical background is needed to understand relevant parts of the neurological examination. Evaluation of the course was excellent. Students expressed their appreciation of a